



ON THE VALIDITY OF LITTLE-KNOWN SPECIES OF SCALPELLIDAE
(CRUSTACEA, CIRRIPIEDIA) COLLECTED BY THE “CAMPAGNES
SCIENTIFIQUES DU S.A.S. PRINCE DE MONACO” FROM NORTH ATLANTIC ¹

(With 2 figures)

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ABSTRACT: Four little-known species of Scalpellidae collected by the SAS Le Prince de Monaco and described by Aurivillius and Gruvel are reevaluated after examining the type-series: *Scalpellum anceps* Aurivillius, 1898 is considered a young specimen of *Litoscalpellum anceps* (Aurivillius, 1898) n. comb. *Litoscalpellum meteoria* Young, 1998 is probably a junior synonym of this species. *Weltnerium pusillum* (Aurivillius, 1898) and *W. richardi* (Gruvel, 1920) are young specimens and hence junior synonyms of *Scalpellum scalpellum* (Linnaeus, 1767). *Scalpellum incisum* Aurivillius, 1898 is transferred to *Arcoscalpellum* and it is considered a senior synonym of *Arcoscalpellum atlanticum* (Gruvel, 1900). The synonym of *Scalpellum alboranense* (Gruvel, 1912) with *Neoscalpellum debile* (Aurivillius, 1989) is reaffirmed.

Key words: Crustacea, Cirripedia, Scalpellidae, taxonomy, North Atlantic.

RESUMO: Sobre a validade de espécies pouco conhecidas de Scalpellidae (Crustacea, Cirripedia) coletadas pelas “Campanhas Científicas do S.A.S. Prince de Monaco” no Atlântico Norte.

Quatro espécies pouco conhecidas de Scalpellidae coletadas pelo SAS Le Prince de Monaco e descritas por Aurivillius e Gruvel são reavaliadas depois de exame das séries-tipo: *Scalpellum anceps* Aurivillius, 1898 é considerado um exemplar jovem de meroscalpelino e é realocado para *Litoscalpellum anceps* (Aurivillius, 1898) n.comb. *Litoscalpellum meteoria* Young, 1998 provavelmente também é um sinônimo desta espécie. *Weltnerium pusillum* (Aurivillius, 1898) e *W. richardi* (Gruvel, 1920) são exemplares jovens e sinônimos juniores de *Scalpellum scalpellum* (Linnaeus, 1767). *Scalpellum incisum* Aurivillius, 1898 é realocado para *Arcoscalpellum* e considerado um sinônimo sênior de *Arcoscalpellum atlanticum* (Gruvel, 1900). A sinonímia de *Scalpellum alboranense* (Gruvel, 1912) como igual a *Neoscalpellum debile* (Aurivillius, 1989) é reafirmada.

Palavras-chave: Crustacea, Cirripedia, Scalpellidae, taxonomia, Atlântico Norte.

INTRODUCTION

The cirripeds collected from the Campagnes of S.A.S. Le Prince de Monaco, presented 12 species of *Scalpellum* described briefly by AURIVILLIUS (1898), but he did not figure them. GRUVEL (1920), subsequently, studied those specimens and, with additional material, recognized 20 species of *Scalpellum*, including two new species. Table 1 lists these species and presents their current taxonomic status. Four of these species described from the Azores region have not been recorded again and therefore have not been reevaluated. They are *Teloscalpellum anceps* (Aurivillius, 1898), *Teloscalpellum incisum* (Aurivillius, 1898), *Weltnerium pusillum* (Aurivillius, 1898) and *Weltnerium richardi* (Gruvel, 1920). Despite recent collections in the region, they have not been collected again (YOUNG, 1998a; 1998b; 2001). Therefore, I undertook a study of the species

described by Aurivillius and Gruvel and deposited in the collections of the Museum national d'Histoire Naturelle, Paris (YOUNG, 2002a; 2002b) and the Musée Océanographique de Monaco (YOUNG, 2003 and herein). In the present paper I reevaluate the status of these little-known species, plus the type-series of *Scalpellum alboranense*.

Family Scalpellidae Pilsbry, 1907

Scalpellum alboranense (Gruvel, 1912)
[= *Neoscalpellum debile* (Aurivillius, 1989)]

Scalpellum alboranense Gruvel, 1920:33, pl.5, figs.4-6; NILSSON-CANTELL, 1955:218; BELLOC, 1959:4.

Material – SAS le Prince de Monaco, sta.650, 36°54'N, 20°46'15"W, 4400m; sta.749, 38°54'N, 21°06'45"W, 5005m, lectotype, cl (tl): 25.6 (34.8)mm, paralectotype, cl (tl): 20.3 (26.4), M.Oc.Monaco.

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Table 1 - Species collected by the "S.A.S. PRINCE DE MONACO" and cited by Aurivillius and Gruvel, with their present taxonomic status.

AURIVILLIUS (1898)	GRUVEL (1920)	PRESENT STATUS	REFERENCES
CALANTICIDAE			
<i>Scalpellum grimaldii</i> Aurivillius, 1898	<i>Scalpellum Grimaldii</i> Aurivillius, 1898	<i>Scillaelepas grimaldi</i> (Aurivillius, 1898)	NEWMAN (1980)
<i>Scalpellum calyculus</i> Aurivillius, 1898	<i>Scalpellum calyculus</i> Aurivillius, 1898	<i>Aurivillialepas calycula</i> (Aurivillius, 1898)	NEWMAN (1980)
<i>Scalpellum falcatum</i> Aurivillius, 1898	<i>Scalpellum falcatum</i> Aurivillius, 1898	<i>Aurivillialepas falcata</i> (Aurivillius, 1898)	NEWMAN (1980)
	<i>Scalpellum acutum</i> Hoek, 1883	<i>Smilium acutum</i> (Hoek, 1883)	ZEVINA (1978a)
SCALPELLIDAE			
<i>Scalpellum debile</i> Aurivillius, 1898	<i>Scalpellum debile</i> Aurivillius, 1898	<i>Neoscalpellum debile</i> (Aurivillius, 1898)	NEWMAN & ROSS (1971)
<i>Scalpellum rigidum</i> Aurivillius, 1898		<i>Amigdoscalpellum rigidum</i> (Aurivillius, 1888)	ZEVINA (1978b)
<i>Scalpellum sordidum</i> Aurivillius, 1898		[= <i>Arcoscalpellum michelottianum</i> (Seguenza, 1876)]	ZEVINA (1981)
<i>Scalpellum mamillatum</i> Aurivillius, 1898	<i>Scalpellum mamillatum</i> Aurivillius, 1898	<i>Arcoscalpellum mamillatum</i> (Aurivillius, 1898)	YOUNG (2001)
<i>Scalpellum anceps</i> Aurivillius, 1898	<i>Scalpellum anceps</i> Aurivillius, 1898	<i>Litoscalpellum anceps</i> (Aurivillius, 1898)	n.comb.
<i>Scalpellum molle</i> Aurivillius, 1898	<i>Scalpellum molle</i> Aurivillius, 1898	[= <i>Trianguloscalpellum regium</i> (W.Thomson, 1873)]	ZEVINA (1981)
<i>Scalpellum erectum</i> Aurivillius, 1898		[= <i>A. michelottianum</i> (Seguenza, 1876)]	ZEVINA (1981)
<i>Scalpellum incisum</i> Aurivillius, 1898	<i>Scalpellum incisum</i> Aurivillius, 1898	<i>Arcoscalpellum incisum</i> (Aurivillius, 1898)	n.comb.
<i>Scalpellum pusillum</i> Aurivillius, 1898	<i>Scalpellum pusillum</i> Aurivillius, 1898	[= <i>Scalpellum scalpellum</i> (Linnaeus, 1767)]	n.synonym
	<i>Scalpellum groenlandicum</i> Aurivillius, 1894	[= <i>Weltnerium nymphocola</i> (Hoek, 1883)]	ZEVINA (1981)
	<i>Scalpellum vulgare</i> Leach, 1824	[= <i>Scalpellum scalpellum</i> (Linnaeus, 1767)]	ZEVINA (1981)
	<i>Scalpellum carinatum</i> Hoek, 1883	<i>Verum carinatum</i> (Hoek, 1883)	ZEVINA (1978b)
	<i>Scalpellum gracile</i> Hoek, 1907	<i>Teloscalpellum gracile</i> (Hoek, 1907)	ZEVINA (1978b)
	<i>Scalpellum striatum</i> Gruvel, 1900	(= <i>Amigdoscalpellum rigidum</i> (Aurivillius, 1888))	ZEVINA (1981)
	<i>Scalpellum atlanticum</i> Gruvel, 1900	[= <i>Arcoscalpellum incisum</i> (Aurivillius, 1898)]	n.synonym
	<i>Scalpellum velutinum</i> Hoek, 1883	[= <i>A. michelottianum</i> (Seguenza, 1876)]	ZEVINA (1981)
	<i>Scalpellum regium</i> W.Thompson, 1873	<i>Trianguloscalpellum regium</i> (W.Thompson, 1873)	ZEVINA (1978b)
	<i>Scalpellum Richardi</i> Gruvel, 1920	[= <i>S. scalpellum</i> (Linnaeus, 1767)]	n.synonym
	<i>Scalpellum alboranense</i> Gruvel, 1920	[= <i>Neoscalpellum debile</i> (Aurivillius, 1898)]	NEWMAN & ROSS (1971)

GRUVEL (1920) cited one specimen collected in each station, but both specimens are included in the same vial, without differentiation from where they come from.

Remarks – As NEWMAN & ROSS (1971) and ZEVINA (1976, 1981) observed, *Scalpellum alboranense* is a synonym of *Neoscalpellum debile* (Aurivillius, 1898). This species reduces the coverage of the capitular plates during its development, and the specimens identified as *S. alboranense* are in an intermediary stage.

Litoscalpellum anceps (Aurivillius, 1898) n.comb.
(Figs.1a-c)

Scalpellum anceps Aurivillius, 1898:191; GRUVEL, 1902a:246; 1905:65; 1920:25, pl.5, figs.1-3; SCHMALZ, 1906:68; NILSSON-CANTELL,

1955:218; BELLOC, 1959:2; ZEVINA, 1976:1155. *Teloscalpellum anceps* – ZEVINA, 1978b:1350; 1981:374, fig.290.

Material examined – SAS Le Prince de Monaco, sta.652, 36°55'N, 22°22'45"W, 4261m, lectotype, cl (tl): 14.0 (18.0)mm, 1 paralectotype, cl (tl): 13.9 (16.5)mm, M.Oc.Monaco.

Remarks – The redescription of *Scalpellum anceps* (Aurivillius, 1898) was based on specimens from station 652, two of which were deposited in Musée océanographique de Monaco and examined by GRUVEL (1920). ZEVINA (1978b; 1981) subsequently included this species in *Teloscalpellum*. But, these specimens are juvenile meroscalpelline scalpellids, which had yet to complete proportional reduction of the capitular plates (Fig. 1).

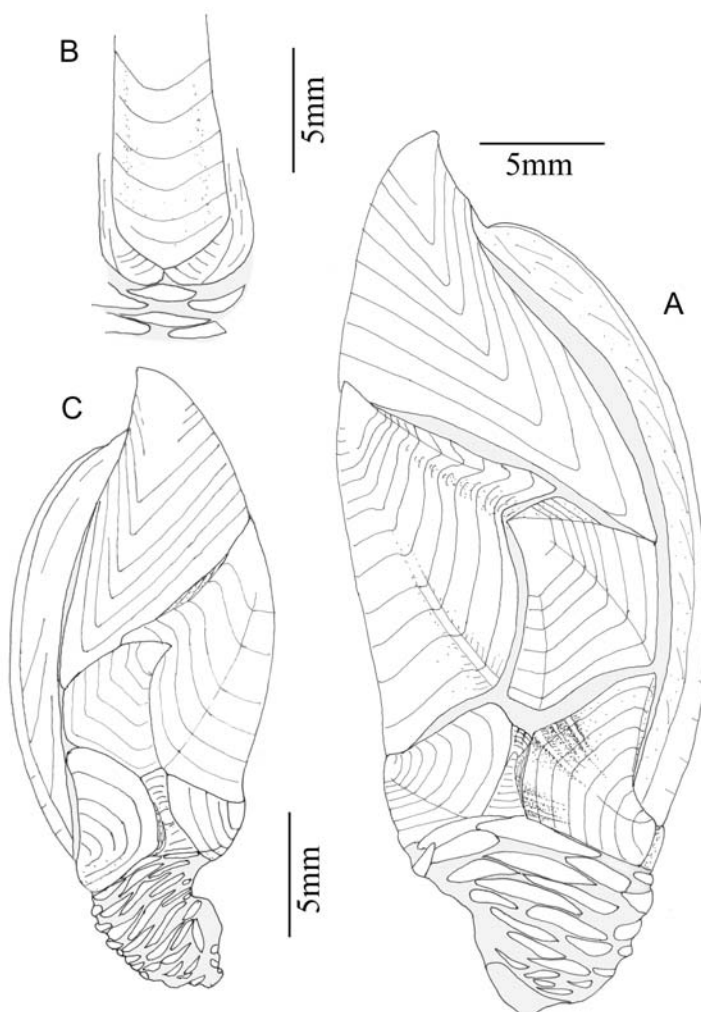


Fig.1- *Litoscalpellum anceps* (Aurivillius, 1898) – lectotype: (A) left lateral view; (B) carinal view; paralectotype: (C) right lateral view.

But even in these specimens, the enlargement of the cuticular sutures between the plates is visible, showing the inception of plate reduction. These specimens are very similar to young specimens of *Litoscalpellum meteoria* Young, 1998, especially that figured in 12b, which is similar in size. The general shape, and the appendages, are very similar to the description of YOUNG (1998b). But in *L. anceps*, the upper-latus has a conspicuous upper limbus above and the carino-latus has its umbo a little more distal along its posterior margin.

Weltnerium richardi (Gruvel, 1920)
[= *Scalpellum scalpellum* (Linnaeus, 1767)]
(Fig.2a)

Scalpellum Richardi Gruvel, 1912:2; 1920:30, pl.3, figs.11-13; BELLOC, 1959:3.

Weltnerium richardi – ZEVINA, 1978b:1347; 1981:201, fig.140.

Material examined – SAS le Prince de Monaco, sta.2974, Parages de Belle Isle, 47°23'N, 3°25'W, 85m, lectotype, cl (tl): 2.8 (3.8)mm, 3 paralectotypes, cl (tl):1.1 (1.6)mm to 2.1 (3.1)mm, M.Oc.Monaco.

Remarks – All the specimens observed are clearly very young specimens of scalpellines, with their length varying from 1.1 to 2.8mm. The largest specimen (Fig.2a) show the carina with the umbo placed in a medial position, and the carino-latus elongated, tapering distally as in young specimens of *Scalpellum scalpellum* (Linnaeus, 1767). Otherwise, its scutum still has an apical umbo and the inframedian-latus is small with the umbo in a higher position. These specimens are similar to those young specimens of *S. scalpellum* figured by NILSSON-CANTELL (1978, fig.6b) and FOSTER & BUCKERIDGE (1995, fig.9d).

Weltnerium pusillum (Aurivillius, 1898)
[= *Scalpellum scalpellum* (Linnaeus, 1767)]

Scalpellum pusillum Aurivillius, 1898:194; GRUVEL, 1902a:246; 1905:60; 1920:24, pl.6, fig.10; SCHMALZ, 1906:68; BELLOC, 1959:3.

Weltnerium pusillum – ZEVINA, 1978b:1347; 1981:212, fig.150.

Material examined – SAS Le Prince de Monaco, sta.161, 46°04'40"N, 46°42'15"W, 1267m; sta. 188, 38°59'N, 28°20'57"W, 2000m, lectotype, cl (tl): 3.8 (4.9) mm, M.Oc.Monaco.

Remarks – AURIVILLIUS (1898) described *Weltnerium pusillum* from two North Atlantic stations, but the only sample I examined was that figured by GRUVEL (1920) (M.Oc.Monaco) but without any station identified. GRUVEL (1920) observed that *S. pusillum* described by AURIVILLIUS (1898) were very young specimens, subsequently decalcified probably due an acid alcohol. The specimen in M.Oc.Monaco is actually very small (4.9mm of total length) and totally decalcified, but under the microscope I can observe that GRUVEL (1920) mistakenly figured its scutum with a medial umbo. This specimen has an apical umbo. As with *Weltnerium richardi*, it is a very young specimen of *Scalpellum scalpellum* (Linnaeus, 1767).

Arcoscalpellum incisum (Aurivillius, 1898)
n.comb.
(Fig.2b)

Scalpellum incisum Aurivillius, 1898:194; GRUVEL, 1902a:246; 1905:71; 1912:2; 1920:26, pl.2, figs.1-3, pl.6, fig.11; SCHMALZ, 1906:68; HOEK, 1907:9; BELLOC, 1959:3.

Scalpellum atlanticum Gruvel, 1900:190; 1902a:246; 1902b:74, pl.2, figs.3F, 17-18; 1902c:523; 1905:68, fig.76; 1920:26, pl.7, fig.5; HOEK, 1914:4; BELLOC, 1959:3.

Teloscalpellum incisum – ZEVINA, 1978b:1350; 1981:383, fig.300.

Teloscalpellum atlanticum – ZEVINA, 1978b:1350; 1981:377, fig.294.

Arcoscalpellum crenulatum FOSTER & BUCKERIDGE, 1995:170, fig.5a-f.

Arcoscalpellum tritonis – YOUNG, 1998a:36, fig.1; 1998b:19, figs.15-16 – not *Arcoscalpellum tritonis* (Hoek, 1883).

Arcoscalpellum atlanticum – YOUNG, 2001:739, figs.23-24; 2002b:321, figs.10-12.

Material examined – SAS Le Prince de Monaco, sta.616, 38°47'40"N, 28°17'05"W, 1022m, lectotype, cl (tl): 11.9 (14.8)mm, 2 paralectotypes, cl (tl): 8.1 (10.5)mm and 8.4 (11.1)mm, M.Oc.Monaco.

Remarks – The type series of *Arcoscalpellum incisum* (Fig.2b) is identical to that redescribed for *Arcoscalpellum atlanticum* by YOUNG (2002b). Therefore, the latter is considered a junior synonym of *A. incisum*. The type localities of both species were also nearby; 38°47'40"N, 28°17'05"W for *A. incisum* and 38°7'N, 29°32'W for *A. atlanticum*.

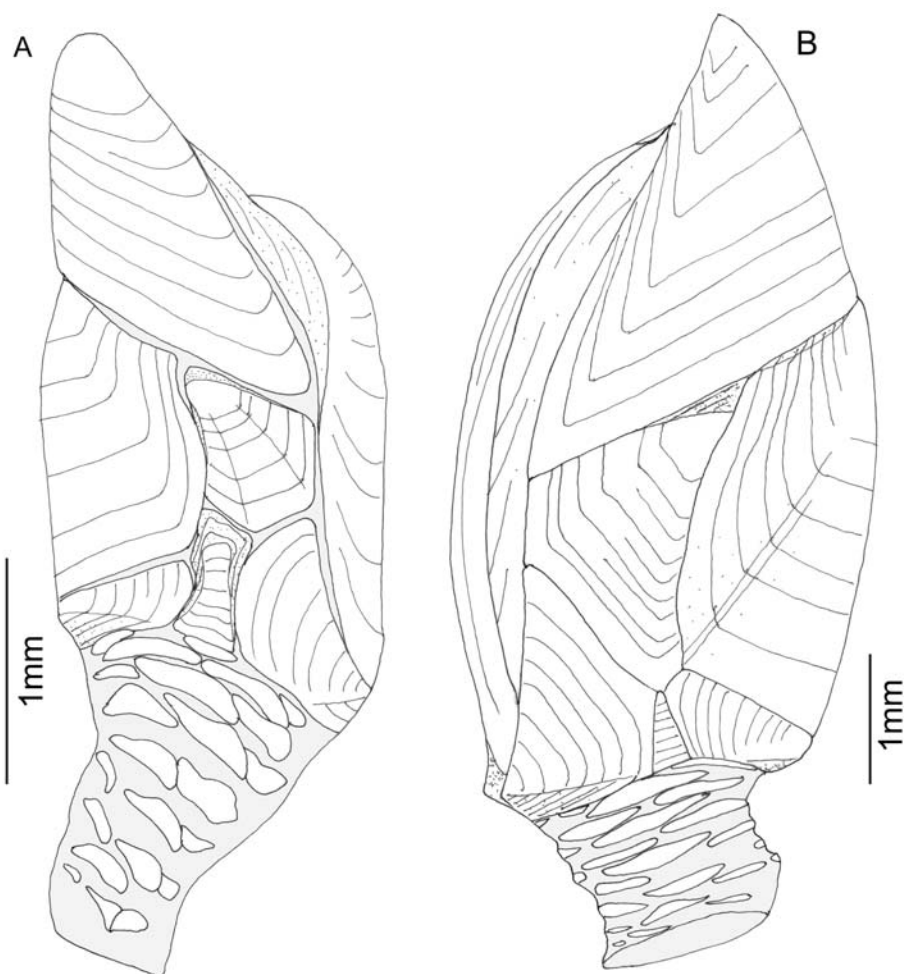


Fig.2- *Weltnerium richardi* (Gruvel, 1920) – lectotype: (A) left lateral view; *Arcoscalpellum incisum* (Aurivillius, 1898) – lectotype: (B) right lateral view.

Other material – I also examined the sample of *Trianguloscalpellum regium* (Thomson, 1873) cited by GRUVEL (1920) from sta.3006 (43°21'N, 10°02'W, 2779m), to reevaluate its identification. However, the specimens had dried out and only disarticulated plates remained, so it would be difficult to reevaluate their specific status.

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